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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/786,113
Filing Date: June 04, 2001
Appellant(s): JOACHIM ET AL.

MAILED
JUN 19 2007
GROUP 1700

~~**MAILED**
JUN 15 2007
GROUP 1700~~

Harris A. Pitlick
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 6, 2007 appealing from the Office action mailed December 14, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,190,997	Lindemann et al.	3-1993
5,284,700	Strauss et al.	2-1994

5,308,692	Kennedy et al.	5-1994
5,972,434	Kajander	10-1999
WO 95/31411	Lohe et al.	11-1995
WO 98/40437	ETTEMA	9-1998

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 19 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Kennedy et al, 5,308,692 (Kennedy).

In claim 15, the language of “prepared by melting a glass or rock mineral composition, fiberizing the molten glass or mineral composition into filaments to form a mineral wool, applying a size...simultaneously or sequentially applying a hydrophilic latex...then taking up the sized mineral wool....and then thermally curing” are process limitations in a product claim. “Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the

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prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 Fed. Cir. 1985. Accordingly, the product of claim 15 is an insulation product comprising mineral wool having a thermosetting resin and hydrophilic latex cured thereon. The product of claim 19 is said insulation product being thermal or acoustical insulation.

Kennedy teaches a nonwoven fiber mat comprising mineral wool coated with a thermosetting resin such as phenol-aldehyde (per claim 27) and a thermoplastic latex that is preferably carboxylated, such as vinyl acetate, vinyl ester or acrylic acid comonomers. See column 8. In addition, at column 15, Kennedy discloses in the examples mineral wool mats with binder compositions wherein the resins used are those as prepared in Example 1, used in combination with a latex such as carboxylated vinylidene chloride/butadiene or emulsified ethylene/vinyl chloride. These latexes are the same type as disclosed by applicants as being suitable hydrophilic latexes. Accordingly, the examiner has reason to believe that the latexes of Kennedy are hydrophilic latexes. The resins of example 1 are thermosetting resins. Thus, Kennedy teaches mineral wool having a thermosetting resin and hydrophilic latex applied thereto and cured.

As to the insulation product of product-by-process claims 15 and 19, emphasis is on the final resultant product. Kennedy teaches in the background that non-woven fiber mats are utilized in numerous applications including insulating material for buildings and sound insulating material. See column 1, lines 10-15. As set forth above, Kennedy teaches a non-woven fiber mat of mineral wool having a thermosetting resin and

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hydrophilic latex thereon. Though Kennedy does not show a specific embodiment of an "insulation product" having a thermosetting resin and hydrophilic latex applied thereto, it is the examiner's position that Kennedy describes the claimed insulation product within the meaning of 35 U.S.C. 102. Kennedy discloses at column 3, lines 51-60 that mats according to the present invention may be applied in structural and building materials and that such utility of non-woven fibrous mats is known in this art (column 1). It is of no moment that Kennedy does not exemplify such insulation product. The skilled artisan is led inevitably to the conclusion that Kennedy provides a description of the claimed final resultant insulation product just as surely as if the reference exemplified such an insulation product. *In re Sivaramakrishnan*, 673, F.2d 1383, 1384-85, 213 USPQ 441, 442 (CCPA 1982) and *In re Schaumann*, 572 F.2d 312, 316-17, 197 USPQ 5, 9, (CCPA 1978).

Therefore, the teachings of Kennedy anticipate the invention as claimed in present claims 15, 19, and 27.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-8, 10-14, 21, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al, 5,308,692 (Kennedy) in view of Kajander 5,972,434 and Strauss et al, 5,284,700 (Strauss).

Kennedy teaches a nonwoven fiber mat comprising mineral wool coated with a thermosetting resin such as phenol-aldehyde and a thermoplastic latex that is preferably carboxylated, such as vinyl acetate, vinyl ester or acrylic acid comonomers, per claims 5 and 26. See column 8. Kennedy also teaches in the background that non-woven fiber mats are utilized in numerous applications including insulating material for buildings and sound insulating material (see column 1, lines 10-15) and discloses at column 3, lines 51-60 that mats according to the present invention may be applied in structural and building materials. In addition, Kennedy teaches that the fibers are produced according to well-known methods such as fiberization through a spinning disk fiberizer, but does not disclose the specific method steps of said well-known methods.

Kajander and Strauss each teach the formation of fire resistant mineral/glass fiber insulation products wherein the fibers and insulation products are produced according to conventional methods known to the art. In particular, Kajander teaches at column 12, lines 32-41, that known processes of making fiber glass insulation products comprises the steps of forming a melt, fiberizing and forming filaments, applying a binder, collecting said filaments and curing to form an insulation product. Strauss teaches a well-known method for producing glass wool comprising melting glass, spinning into filaments, collecting the formed filaments wherein a binder is applied to the filaments and the uncured glass wool is cured. See column 5, lines 25-45. Thus, the well-known and conventional method steps of Kajander and Strauss render obvious the method steps of the present claims.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kennedy by producing his filaments through any well-known and conventional method, such as those methods seen in the prior art teachings of Kajander and Strauss, said method including fiberizing molten glass to form a mineral wool, applying a binder, collecting said mineral wool and curing, as required by claims 1 and 13. As to the requirement of "improving the mechanical strength after ageing of an insulation product comprising mineral wool", the examiner has reason to believe that the resultant articles of Kennedy have improved mechanical strength after ageing because the prior art teaches the same, conventional process steps as applicants, utilizing a similar coating composition as required by claim 1. As to claims 6-8, 10-11 and 23-24, Kennedy teaches polymers of the type contemplated by applicants. Therefore, the examiner has reason to believe that properties such as the glass transition temperature are within the instant claimed range. As to claims 12 and 25, it would have been obvious to determine and adjust the amount of solids with respect to the weight of the mineral wool to ensure sufficient coating of the filaments and adhesion of the insulation product. Regarding claim 14, it would have been obvious to apply the latex separately from the thermosetting resin. More specifically, in the instant case, the sequential application onto a substrate of coating/binder materials that had previously been applied simultaneously, would have been an obvious variant when there is no clear necessary reaction or synergy between said materials that is solely evident or present when said components are applied simultaneously.

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Accordingly, the combined teachings of Kennedy, Kajander and Strauss would have rendered obvious the invention as claimed in present claims 1, 5-8, 10-14, 21, and 23-26.

Claims 9, 22, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al, 5,308,692 (Kennedy) in view of Kajander 5,972,434 and Strauss et al, 5,284,700 (Strauss) each as applied above and further in view of Lindemann et al, 5,190,997 (Lindemann).

Kennedy, Kajander and Strauss are each as set forth above, but do not teach the inclusion of a water-repellent or a colloid as set forth in claim 32. Lindemann is as set forth previously and teaches a binder composition that can be used for insulation products and glass mats; said composition comprising a thermosetting resin and a latex which can contain a protective colloid such as cellulose or polyvinyl alcohol. In addition, Lindemann teaches that his composition can contain a water-repellent agent such as silicone. Regarding claims 9 and 22, it would have been obvious to one of ordinary skill in the art to modify the composition of Kennedy by including a water-repellent agent such as silicone to protect the resultant insulation product against moisture. As to claim 32, it would have been obvious to modify the composition of Kennedy by including a protective colloid of the type contemplated by applicants for stability in the composition.

Therefore, the combined teachings of Kennedy, Kajander, Strauss and Lindemann would have rendered obvious the invention as claimed in present claims 9, 22 and 32.

Claims 2, 16-17, 29-31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al, 5,308,692 (Kennedy) in view of Kajander 5,972,434 and Strauss et al, 5,284,700 as applied above to claims 1, 5-8, 10-14, 19, 21, and 23-27, further in view of PCT Publication WO 95/31411 (the publication).

Kennedy, Kajander, and Strauss are as applied above, but are silent as to their glass fibers being capable of dissolving in a physiological medium. The publication teaches biologically degradable mineral fibers that can be used for insulation purposes, per claims 2 and 16 and comprises at least one alkali metal oxide in the amounts set forth by applicants in claims 29-31. See pages 2-3. While silent as to the specific rate of dissolution as required by claims 17 and 33-34, it is noted that the fibers of the publication are the same type disclosed by applicants as being suitable. Accordingly, it is the position of the examiner that this property is inherent in the fibers of the publication. It would have been obvious to use as the fibers of Kennedy mineral fibers as taught by the publication for the efficacious properties associated therewith, namely, biological degradability, temperature stability and good processability.

Therefore, the combined teachings of Kennedy, Kajander, Strauss and the publication would have rendered obvious the invention as claimed in present claims 2, 16-17, 29-31, and 33-34.

Claims 18, 28, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al, 5,308,692 (Kennedy) as applied above to claim 15, in view of PCT Publication WO 98/40437 (the publication), cited to show the state of the art.

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Kennedy is a set forth above but does not teach the density of his insulation product. The publication is cited to show the general state of the art at the time the invention was made, namely, that it is known in the art that mineral wool densities varied generally between 5 and 200 kg/m³. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce an insulation product of the type set forth by applicants wherein the density of said product is within the range generally known in the art and as set forth by applicants in claims 18, 28, and 35. Moreover, this limitation is not construed to be a matter of invention in the absence of factual evidence to the contrary.

Therefore, the teachings of Kennedy in combination with the general level of ordinary skill and knowledge in the art as evidenced by the publication would have rendered obvious the invention claimed in present claims 18, 28 and 35.

(10) Response to Argument

Appellants argue that the comparative tests found in the specification between the use of no latex and latex show that properties after ageing were demonstrably superior with the present invention compared to comparative products made without the addition of any latex.

In this regard, appellants' comparative data in the specification has been noted. However, it is also noted that the showing is not commensurate in scope with the claims, for example, instant claim 1, 21, 29, and 30.

Ground (A)

Appellants argue that Kennedy does not anticipate the presently-claimed invention, nor does Kennedy et al otherwise render the presently-claimed invention unpatentable because in the lattices disclosed by Kennedy et al, none are based on polymers or copolymers wherein each monomer has a hydroxyl, carboxyl or ester group, nor does Kennedy et al disclose the presence of a protective colloid.

In this regard, Kennedy discloses that the polymer or copolymers used are formed from monomers such as vinyl acetate, vinyl ester, acrylic acid monomers, methacrylic acid monomers and esters thereof, as well as latex polymers such as carboxylated vinylidene chloride/butadiene. It is the examiner's position that Kennedy discloses the same type of polymers or copolymers that are disclosed by appellants on pages 5-6 in their specification as being suitable, such as "vinyl type" or "acrylic type lattices", including those based on "vinyl acetate". Accordingly, it is the examiner's position that the monomers disclosed by Kennedy are monomers that have a hydroxyl, carboxyl or ester group, as required by appellants.

Appellants argue that the structure of the fiber resistant mat of Kennedy et al would necessarily be different from that of the presently-claimed insulation product, further arguing that the binder used in Kennedy et al is different from a size and that a product, i.e., the present invention, wherein the filaments have been uniformly applied with a sizing composition comprising a hydrophilic latex prior to any shaping operation will inevitably possess different characteristics when compared to a product where a binder is applied to a continuous membrane of fibers, as disclosed by Kennedy et al.

The examiner disagrees. In particular, product claims 15 and 19 are not limited to any particular structure other than an "insulation product". These claims set forth an "insulation product" comprised of a web of mineral wool having a size comprising a thermosetting resin and a hydrophilic latex applied thereto. Kennedy teaches insulation formed from a web comprising mineral wool having a thermosetting resin of the same type contemplated by appellants and a latex, also of the type contemplated by appellants. As to appellant's arguments that a binder is different from a size, Kennedy teaches a binder composition that comprises a thermosetting resin and a latex wherein the thermosetting resin and latex are the same as the thermosetting resin and latex of appellants' size. Accordingly, Kennedy teaches the same composition as that set forth by appellants. It is the examiner's position that the same composition necessarily has the same properties and in the present case, the same function. As to the product of the present invention inevitably possessing different characteristics when compared to a product as disclosed by Kennedy, Kennedy teaches at column 11, lines 47-48 that enough binder is applied to the membrane to completely saturate the fibers. The skilled artisan would immediately envisage some degree of uniformity in the application of the binder material to the fibers. Appellants have not established on this record that the instant claimed insulation product can only be defined by the process steps by which said product is made. Again, emphasis is on the end product and there is no distinguishing step in the process of claim 15 that would inevitably lead one of ordinary skill in this art to expect the instant claimed process to impart distinctive structural characteristics to the final product.

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Ground (B)

Appellants argue that neither Kajander nor Strauss et al, alone or in any combination remedy the deficiencies of Kennedy, further arguing that even if the mineral fibers of Kennedy et al. were prepared by the conventional processes disclosed by Kajander and/or Strauss et al., the result would still not be the presently-claimed invention because neither Kajander nor Strauss et al. disclose the presence of the presently-recited hydrophilic latex applied to mineral wool as a size, prior to taking up the sized mineral wool in the form of a web.

In this regard, it is the position of the examiner that a reference is to be considered not only for what it expressly states, but for what it would reasonably have suggested to one of ordinary skill in the art. *In re DeLisle*, 160 USPQ 170 (CCPA 1971). It is also the position of the examiner that one must approach the issue of patentability in terms of what would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the sum of all the relevant teachings in the art, not in view of the first one and then another of the isolated teachings in the art. *In re Kuderna*, 165 USPQ 575 (CCPA 1970). Kajander and Strauss each teach known fiberizing processes that include the process step of forming filaments and applying a binder thereto and collecting said filaments to form an insulation product. The fact that Kennedy discloses that conventional fiberizing processes could be used would have provided a suggestion to the skilled artisan that his insulation product could be formed using known conventional processes, such as those taught by Kajander and/or Strauss

whereby the latex binder is applied to the mineral wool prior to taking up the mineral wool in the form of a web.

Appellants argue that claim 10 is separately patentable since Kennedy et al. evinces no recognition of any significance with regard to glass transition temperature of the thermoplastic polymers used for their latex component and that the particular thermoplastic polymers disclosed in Kennedy et al. are inclusive of polymers having a glass transition temperature outside the terms of the present claim.

In this regard, it is the examiner's position that the combined teachings in the prior art clearly suggests a process essentially as claimed by appellants. Therefore, with respect to the glass transition temperature, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 105 USPQ 233 (CCPA 1955). In addition, there is no factual evidence on this record that support the allegation that the thermoplastic polymers disclosed by Kennedy et al. are inclusive of polymers having a glass transition temperature outside the terms of the present claim.

Appellants state that the arguments for claims 11, 23 and 24 are identical to that for claim 10, *supra*.

Accordingly, the examiner's response is as set forth above with respect to claim 10, *supra*.

Appellants argue that Kennedy et al. does not disclose a homopolymer or copolymer prepared from one or more monomers each having at least one hydrophilic functional group selected from the group consisting of hydroxyl, carboxyl and ester, nor

does Kennedy et al. disclose the presence of a protective colloid having hydrophilic functional groups.

In this regard, as set forth by the examiner in the response to Ground (A), in this regard, Kennedy discloses that the polymer or copolymers used are formed from monomers such as vinyl acetate, vinyl ester, acrylic acid monomers, methacrylic acid monomers and esters thereof, as well as latex polymers such as carboxylated vinylidene chloride/butadiene. It is the examiner's position that Kennedy discloses the same type of polymers or copolymers that are disclosed by appellants on pages 5-6 in their specification as being suitable, such as "vinyl type" or "acrylic type lattices", including those based on "vinyl acetate". Accordingly, it is the examiner's position that the monomers disclosed by Kennedy are monomers that have a hydroxyl, carboxyl or ester group, as required by appellants.

Ground (C)

Appellants argue that Lindemann et al. does not remedy the deficiencies of Kennedy et al, with Kajander and Strauss et al., further arguing that Lindemann et al., is silent to the process steps of the present invention, and does not disclose hydrophilic lattices of the type recited in the present claims, or the use of a water-repellent agent with a latex and nor does Lindemann et al., disclose a protective colloid with an aqueous dispersion or emulsion of a homopolymer or copolymer as a latex in a sizing treatment.

As set forth above, it is the position of the examiner that a reference is to be considered not only for what it expressly states, but for what it would reasonably have

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suggested to one of ordinary skill in the art. *In re DeLisle*, 160 USPQ 170 (CCPA 1971). It is also the position of the examiner that one must approach the issue of patentability in terms of what would have been obvious to one of ordinary skill in the art at the time the invention was made in view of the sum of all the relevant teachings in the art, not in view of the first one and then another of the isolated teachings in the art. *In re Kuderna*, 165 USPQ 575 (CCPA 1970). In the instant case, Lindemann teaches the inclusion of silicone. Accordingly, the teachings of Lindemann would have rendered obvious the invention as claimed in present claims 9, 22, and 32.

Ground (D)

Appellants argues that WO '411 does not remedy the deficiencies in the combination of Kennedy et al., with Kajander and Strauss et al. and the combination of prior art would not be the presently-claimed invention and could not have predicted the superior results obtained.

In this regard, as set forth previously, the fibers of the publication are the same type disclosed by appellants as being suitable. It is the examiner's position that the same fibers necessarily have the same properties. Also, it is the examiner's position that if the evaluation of the invention as a whole is obvious, evidence or superior results does not preclude the finding of obviousness. *In re Lindell*, 155 USPQ 521 (CCPA 1967).

Ground (E)

Appellants argue that WO '437 does not remedy the deficiencies of Kennedy et al., and that even if the mat of Kennedy et al., had the density as disclosed by WO '437,

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the results would still not be the presently claimed invention and the combination could not have predicted the aforementioned superior results.

In this regard, the publication is cited to show the state of the art at the time the invention was made, namely, that it is known in the art that mineral wool densities varied generally between 5 and 200 kg/m³. Hence, it is the examiner's position that if the evaluation of the invention as a whole is obvious, evidence of superior results does not preclude the finding of obviousness. *In re Lindell*, 155 USPQ 521 (CCPA 1967).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Primary Examiner AU 1774

Conferees:

Rena Dye



SPE AU 1774

/Jennifer Michener/

Quality Assurance Specialist